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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/659,406

09/10/2003

Robert Ryan Vallance

434-281

4637

1009

7590

11/17/2008

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EXAMINER

NGUYEN, HOANG M

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/659,406	<b>Applicant(s)</b> VALLANCE ET AL.	
	<b>Examiner</b> Hoang M. Nguyen	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16, 18-25 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 6, 17, 26, 30-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

Applicant's amendment dated October 13, 2008, has been fully considered.

First, the Examiner agrees to withdraw the 103 rejections based on Daniels in view of Gummin. Also, claims 6, 17, 26, 30-31, are objected to on the merit.

Applicant argued Gummin et al does not teach a housing and the first end of the SMA wire is connected to the housing. The Examiner disagrees. Gummin et al clearly disclose housing 41, SMA wire 36A in channel 43 is connected with anchor 37 to the housing, and the other end of wire 36A is connected with bracket 33A and stop 32A sliding in channel 42; or wire 36D can be considered the other end because it's connected with 36A through other elements, and the last stop member 38. As noted before in the previous Office Action, the stop 16 in this application is indirectly connected with wire 18 through retainer 20; said stop 16 is simply an output member driven by the wire 18. The wires stops 32A or 48 clearly meet the claimed subject matter.

The rejections based on Gummin et al have been maintained and new ground of rejections has been made based on newly discovered references from further searches.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 10, 11, 12, 14, 20, 23, are rejected under 35 U.S.C. 102(e) as being anticipated by US 6762515 (Gummin et al).

Gummin et al is relied upon to disclose SMA actuator comprising wire guide (channels 42) for SMA wires 42-43 or 101-104, and many SMA actuators with SMA wires 36, 61, operated together (note figures 2, 12, 15), the output elements 38, 63 can be used as stop or locking means as claimed and said elements are actuated by electric heater and pulled back by springs 39, 68 into the channels, e.g. 42. Also, as noted above, Gummin et al clearly disclose housing 41, SMA wire 36A in channel 43 is connected with anchor 37 to the housing, and the other end of wire 36A is connected with bracket 33A and stop 32A sliding in channel 42; or wire 36D can be considered the other end because it's connected with 36A through other elements, and the last stop member 38.

Claims 1, 3-5, 7-10, are rejected under 35 U.S.C. 102(b) as being anticipated by US 6216779 (Reinhardt).

Reinhardt discloses SMA actuator comprising SMA wire 20, return spring 28, a wire heater 22, a stop 26 being displaceable on a linear axis with respect to the

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housing; said SMA wire 20 is connected with the housing 18 at one end and to the stop 26 at the other end, a wire guide 24.

Claims 1, 3-5, 7-10, are further rejected under 35 U.S.C. 102(b) as being anticipated by US 5079920 (Whitehead et al).

Whitehead et al discloses SMA actuator comprising SMA wire 20, return spring 60, a wire heater 28-30, a stop 16 being displaceable on a linear axis with respect to the housing; said SMA wire 20 is connected with the housing 12 at one end and to the stop 16 at the other end, a wire guide 14.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 13, 22, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6762515 (Gummin et al) in view of U.S. 6574958 (MacGregor). Gummin et al discloses all the claimed subject matter as set forth above in the rejection of claim 1, but does not disclose a curved wire guide. MacGregor is relied upon to disclose it's well

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known to use the SMA actuator with wire guides 901-902 (figures 9-12) for ease of moving the wires. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide curve wire guides in Gummin et al as taught by MacGregor for the purpose of ease of guiding the SMA wires.

Claims 4-5, 7-8, 15-16, 18-19, 24-25, 27-28, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6762515 (Gummin et al) in view of U.S. 6453669 (Kennedy et al). Gummin et al discloses all the claimed subject matter as set forth above in the rejection of claim 1, but does not disclose a bearing with channel for guiding the wires. Kennedy et al is relied upon to disclose it's well known to use the SMA actuator having bearings 66, 66' having channel for guiding SMA elements 64, 64'. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide bearings with channels in Gummin et al as taught by Kennedy et al for the purpose of ease of guiding the SMA wires.

Claims 9, 20, 29, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6762515 (Gummin et al). Gummin et al discloses all the claimed subject matter as set forth above in the rejection of claim 1, but does not disclose different SMA materials. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to elect different types of SMA materials in Gummin et al for the purpose of achieving appropriate work outputs.

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Claims 6, 17, 26, 30-31, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Nguyen whose telephone number is (571) 272-4861. The examiner can normally be reached on Tuesday--Friday from 12:30 AM to 10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on 571-272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Hoang M Nguyen/  
Primary Examiner, Art Unit 3748

HOANG NGUYEN  
PRIMARY EXAMINER  
ART UNIT 3748

Hoang Minh Nguyen  
11/18/2008